

Advanced Algebra
Solving Quadratic Equations

Solve by factoring or square roots.

1. $x^2 + 4x - 5 = 0$

2. $4x^2 - 100 = 0$

3. $x^2 = -2x + 1$

4. $x^2 - 9 = 0$

5. $2x^2 + 4x = 70$

6. $x^2 = -4x$

Solve by completing the square.

7. $x^2 - 4x + 12 = 0$

8. $x^2 + 4x + 8 = 0$

9. $x^2 + 8x - 17 = 0$

10. $6x^2 + 24x + 12 = 0$

Solve using the quadratic formula.

11. $x^2 - 4x + 3 = 0$

12. $2x^2 + 5x - 7 = 0$

13. $3x^2 + 2x = 1$

14. $2x^2 - 5 = -3x$

15. $x^2 - 6x + 11 = 0$

16. $x(x - 5) = -4$

Evaluate the discriminant of each equation. Tell how many solutions each has.

17. $x^2 + 4x + 5 = 0$

18. $4x^2 + 20x + 25 = 0$

19. $x^2 - 12x + 36 = 0$

20. $x^2 = 8x - 16$

Write the equation that has the given solutions.

21. 2, -3

22. 6, 5

23. $\frac{1}{2}$, $-\frac{2}{3}$

24. $\frac{1}{5}$, $-\frac{2}{5}$